



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/569,475	02/24/2006	Haruyuki Makio	1155-0293PUS	8543
225/2	7590	11/26/2008		
BIRCH STEWART KOLASCH & BIRCH				EXAMINER
PO BOX 747				ASINOVSKY, OLGA
FALLS CHURCH, VA 22040-0747			ART UNIT	PAPER NUMBER
			1796	
NOTIFICATION DATE	DELIVERY MODE			
11/26/2008	ELECTRONIC			

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/569,475	<b>Applicant(s)</b> MAKIO ET AL.
	<b>Examiner</b> OLGA ASINOVSKY	<b>Art Unit</b> 1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 04 August 2008.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1,3 and 4 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1,3 and 4 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/0256/06)  
Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

Applicants amend claim 1 by the definition of an olefin in a polymer chain and include that the number average molecular weight is 9000 or more in claim 1.

Cancellation of claim 2 is noted. New claim 4 is noted.

Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The original specification at page 27, line 20 discloses that a Mn is 9560. The limitation of "9000 or more" is considered to be new matter.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Nakagawa et al U.S. Patent 6,274,688.

Reference has been considered in the office action mailed on 04/03/2008. All discussions are adequately set here.

Nakagawa discloses functional groups-terminated vinyl polymer, wherein the vinyl monomers such as ethylene and propylene can be used alone, column 5, lines 37 and 40; column 6, lines 1-15, for the present claim 1 for P polymer chain. The vinyl polymer can have Mw/Mn most desirably not more than 1.3, column 4, line 47. The terminal hydroxyl group bound to the main chain via an ether bond, an ester bond, a carbonate bond, column 6, lines 23-67, for claimed X and Y in claim 1. Also, the resulting producing polymers can have both terminals of a main chain polymer wherein terminal groups include chlorine, bromine or iodine, or halogenated sulfonyl compound, column 8, lines 33-65. The functional group is readable in the present claim 1. The number average molecular weight of the vinyl polymer is more preferably within the range of 3,000 to 50,000, column 4, line 56, for the present claim 1. Claimed number average molecular weight of 9000 or more is overlapped in the range of the Mn in Nakagawa invention. The claimed molecular weigh distribution Mw/Mn in a range of from 1.0 to 1.5 is readable for being not more than 1.3 in Nakagawa invention. All claimed limitations of a telechelic polyolefin are disclosed in Nakagawa invention. The claimed invention is fully anticipated by the disclosure in Nakagawa' 688.

***Response to Arguments***

2. Applicant's arguments filed 08/04/2008 have been fully considered but they are not persuasive. Argument is that Nakagawa discloses a conventional method for producing a polyolefin. The address to a process condition for producing a polyolefin is not persuasive. The claimed invention in claim 1 is a composition.

The rejection of claim 1 under 35 U.S.C. 102(b) as being anticipated by Kennedy et al U.S. Patent 4,276,394 is withdrawn in light of the amendment and applicant remarks wherein the amended claim 1 no longer includes isobutylene; since isobutylene CH<sub>2</sub>=C(CH<sub>3</sub>)-CH<sub>3</sub> is not the same as claimed 1-butene CH<sub>3</sub>-CH=CH-CH<sub>3</sub> (difference is in an atomic arrangement).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al U.S. Patent 6,274,688 as applied to claim 1 above, and further in view of Kioka et al U.S. Patent 5,939,495.

Claim 3 requires an olefin polymerization catalyst which contains a transition metal in the groups IV to V.

Kioka reference has been considered at page 5 in the office action mailed on 04/03/2008.

Kioka discloses a process for producing polyolefin having functional group at its terminal. The polymerization process for obtaining the terminal-modified polyolefin is

carried out in the presence of titanium catalyst such as titanium tetrachloride for being claimed transition metal in Group IV, column 3, lines 5-45.

It would have been obvious to one of ordinary skill in the art to modify a process for producing functionalized oligoolefin having functional groups at both ends of said oligoolefin in Nakagawa invention by using a transition metal catalyst such as a titanium tetrachloride in Kioka invention for the purposes to easy conversion of a terminal group of the polyolefin to a functional group enables improving coating and adherence properties of the polyolefin, Kioka, column 1, lines 10-16.

The rejection of claim 1 under 35 U.S.C. 102(e) as being anticipated by Sawaguchi U.S. Patent 7,125,834 is withdrawn upon the present amendment to claim 1 requiring a Mn being 9,000 or more; Sawaguchi discloses a Mn of from 1,000 to 5,000, column 6, line 42.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawaguchi et al U.S. Patent 7,125,834 in view of Kioka et al U.S. Patent 5,939,495.

Sawaguchi has been discussed in the prior office action at page 3 mailed on 04/03/2008. All discussions are adequately set here.

In addition, aliphatic polyolefins include poly(1-butene), poly(1-pentene), polypropylene, column 9, lines 37-38. The aliphatic polyolefins are functionalized at ends thereof, column 13, lines 1-3; column 12, line 10. The Mw/Mn can be in the range of 1.09, column 30, line 58. The Mn is from 1,000 to 5,000, column 10, line 41.

The difference is that Sawaguchi discloses a lower Mn than in the present claim 1.

Kioka discloses a process for producing polyolefin having functional group at its terminal. The polyolefin=P-polymer can have olefin monomer units in the range of 50 to 10,000, column 2, line 28, for the present claim 1. The Mn in the range of 9,700, column 15, line 64 is readable in the present claim 1. The polymerization process for obtaining the terminal-modified polyolefin is carried out in the presence of titanium catalyst such as titanium tetrachloride for being claimed transition metal in Group IV, column 3, lines 5-45. The polymerization process condition by using a transition metal catalyst is readable in the present claim 3.

It would have been obvious to one of ordinary skill in the art to modify a process for producing functionalized oligoolefin having functional groups at both ends of said oligoolefin in Sawaguchi invention by using a transition metal catalyst such as a titanium tetrachloride in Kioka invention for the purposes for producing the resulting polyolefin product having claimed Mn in the range of at least 9,000 for producing the desired polyolefin having a functional group at its terminal with industrial advantages, Kioka, column 13, line 37, and to easy conversion of a terminal group of the polyolefin to a

functional group enables improving coating and adherence properties of the polyolefin, Kioka, column 1, lines 10-16.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claim 4 is rejected under 35 U.S.C. 102(b) as being anticipated by Nubel et al U.S. Patent 5,731,383.

Nubel discloses difunctional telechelic linear polyolefins having functional group at ends terminal chain, column 6, lines 48-66. The functional group X includes an ester moiety, a hydroxyl moiety and an amine moiety, column 6, line 57, for X and Y definition in the present claim 4. The polydispersity is from 1.3, column 2, line 8, for the present claim

4. The process utilizes a catalyst compound comprising a transition metal such as salt of tantalum, column 9, line 56, and tin compound, column 10, line 4. These transition metal catalysts are readable in the claimed metal of Group V and IV. The process for producing telechelic linear non-crosslinked polyolefin includes step 1) for producing monofunctional olefin and step 2) for producing difunctional olefin, column 9, lines 15-46. Step of adding cyclic olefin is readable in the present claim 4 step 2). The polyolefin comprising difunctional telechelic linear non-crosslinked polyolefins can be used as additives polymeric compound with improved properties for polyesters, polyamides,

polyureas and polyurethanes, column 2, lines 31-32. Therefore, the claimed step 3) if necessary is also readable in Nubel invention.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLGA ASINOVSKY whose telephone number is (571)272-1066. The examiner can normally be reached on 9:00 to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Randy Gulakowski/  
Supervisory Patent Examiner, Art Unit 1796  
/O.A./

Olga Asinovsky  
Examiner  
Art Unit 1796